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THE MIAMI CONSERVANCY BULLETIN

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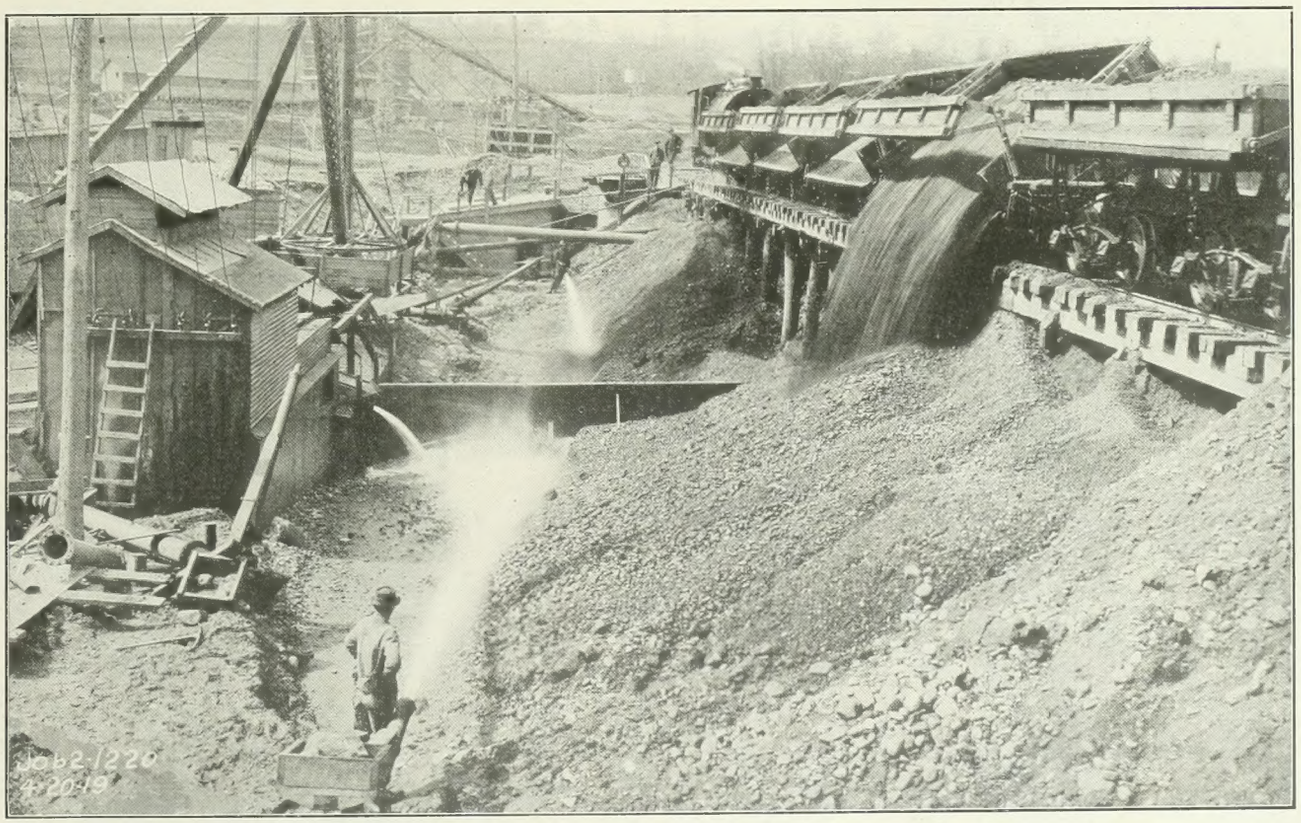
MAY 1919



HOG BOX FOR HYDRAULIC FILL AT ENGLEWOOD. APRIL 20, 1919.

50 CENTS PER YEAR 5 CENTS PER COPY

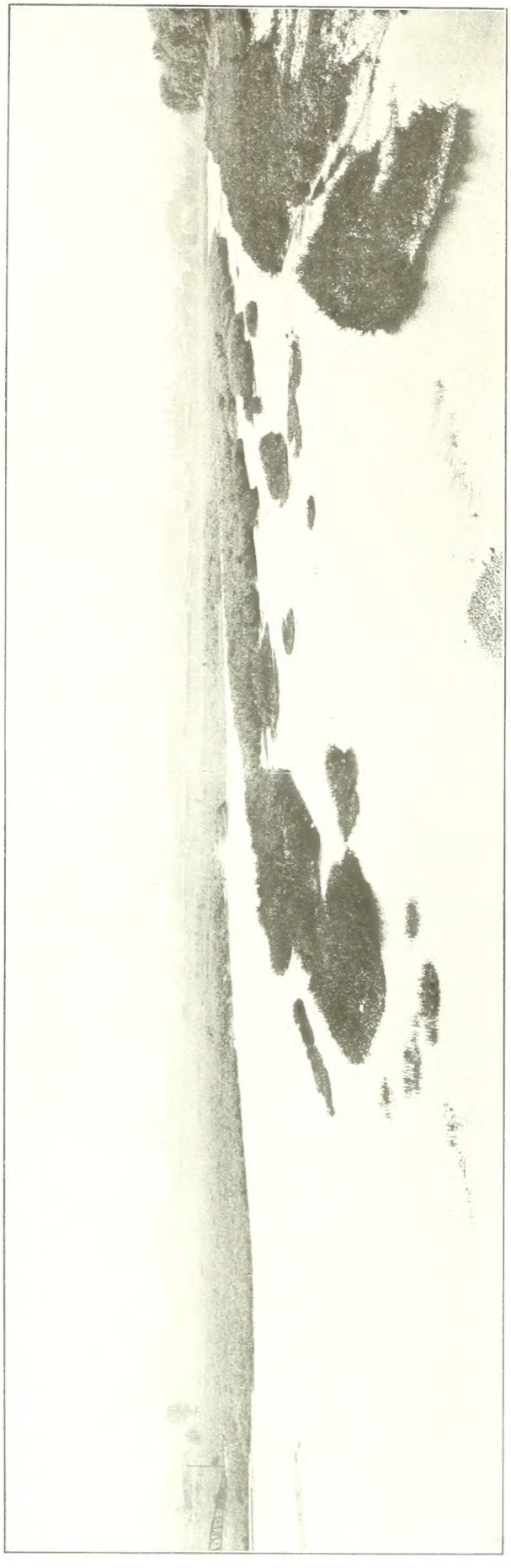


FIG. 129—LOOKING DOWN THE MIAMI RIVER, MAY 21, 1918, BEFORE WORK WAS BEGUN. SEE PAGE 151.

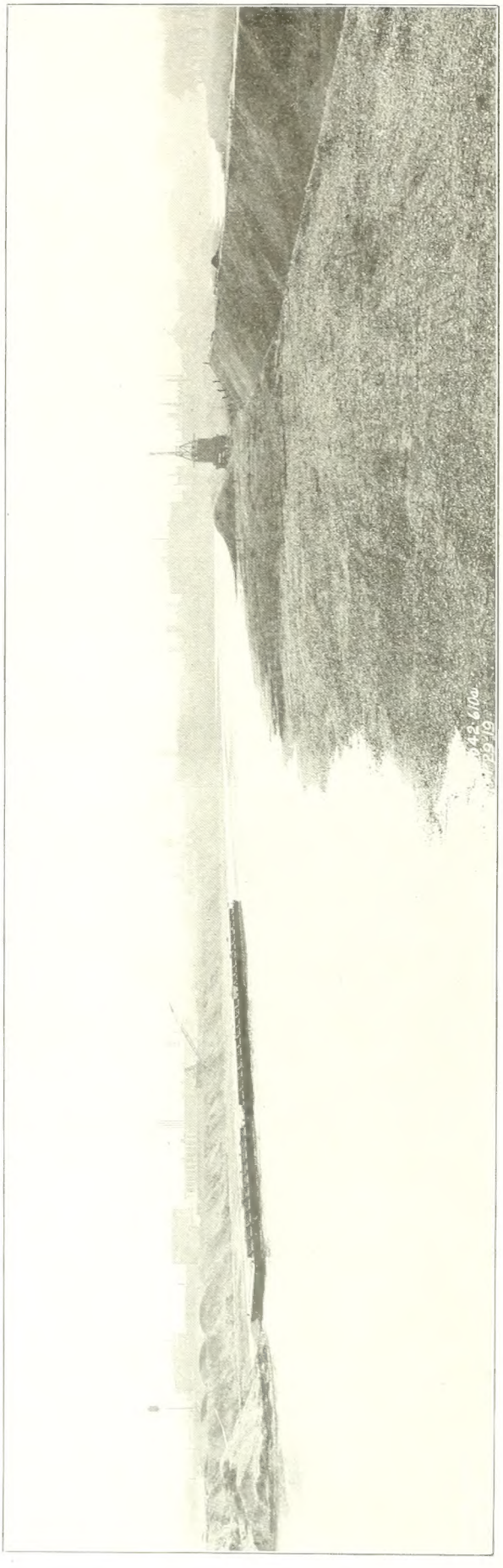


FIG. 130—THE SAME AS FIG. 129, JANUARY 29, 1919.

THE MIAMI CONSERVANCY BULLETIN SUPPLEMENT

"The News Letter"

To Promote the Conservancy Spirit on the Work

May, 1919

ENGLEWOOD

FOURTH OF JULY IS ENGLEWOOD'S DAY. SAVE FOURTH OF JULY FOR ENGLEWOOD. Announcement is made thus far in advance in order that there may be no conflicts on this date. Englewood has selected the Fourth of July as its day to entertain all the employees of the District as its guests in a big outdoor picnic and celebration. More detailed announcement will be made later. Be sure and save the Fourth of July for Englewood if you want a big time.

Iced Fruit Punch and Other Good Things

The work of the Riverside Community Association has continued to make very satisfactory progress during the past month. Our new Community Hall, of which we are very proud, was opened informally the evening of Saturday, April 5th. Dancing was enjoyed in the main hall, while tables for cards were provided in the ladies' and men's club rooms. Refreshments of iced fruit punch and wafers were furnished by the entertainment committee. A large crowd was present and many complimentary expressions were heard with reference to the adaptability of the building to all community purposes and to the excellence of the dance floor. A player piano and a billiard table have been purchased by the Association, the former for the hall, and the latter for the men's club room.

Spring Fever Among the Fans

Spring fever is rife in camp and the boys may be seen any evening when the weather permits limbering up their arms for the coming baseball season. We are hoping to receive favorable answers soon to the challenge published in the last Bulletin. It has been called to our attention that only the other camps of the District were included specifically in the challenge and not the Dayton headquarters. The oversight was entirely inadvertent and we take this opportunity to extend the challenge to Headquarters.

Othello + Sandwiches + Doughnuts + Pep = $20.00

A benefit for the Children's Playground was held at the Mess Hall Friday evening, April 4th. An evening both pleasurable and of educational value was supplied by the movie version of Shakespeare's "Othello," provided thru the kindness of Mr. Hauck. The girls of the Domestic Science Class of the Camp School prepared and served delicious refreshments of sandwiches, doughnuts and hot chocolate. The voluntary contribution for the playground fund netted considerably over twenty dollars.

Ladies Also Get Busy

The ladies of the camp have organized themselves for the purpose of stimulating women's activities and to cooperate more effectively in the social activities of the camp and in the other work of the association. The comfortable rooms which have been provided in the Community Hall for the exclusive use of the ladies in camp will be of great value and assistance in this work.

Oldest Inhabitant Departs

One of the first residents of the camp, Mr. C. W. Porter-Shirley, left the middle of April for Genesee, Illinois, where he will resume his work as a Unitarian minister. Mr. Porter-Shirley and his son made the trip to their new home by automobile, while Mrs. Porter-Shirley remained behind for a few days' visit with Mr. and Mrs. J. L. Southworth. The best wishes of their friends in camp go with them in their new work.

Ford Fever Rampant

Fred Gibson and J. H. Gerecke have bought themselves machines—or rather Fords—recently. Pete Haskell has been heard to express a similar intention. Fords seem to be contagious.

Mr. Arthur H. Kent, Camp Overseer, spent a week-end visiting his parents in Chicago.

Several new faces are to be seen among the occupants of cottages in camp, among them being "Bill" Heller, Carl Winnewisser and Charley Miller, dragline runners, and Al Hawkins, pumpman. Don Henry and Jack Owens have changed their locations during the month.

Jazz?

We expect soon to have the advantage of our own music in camp. George Saltmarsh and Bert Werts are busily engaged in organizing an orchestra and whipping it into shape.

Growing Greener Every Day

Many things have been done during the past month which have added greatly to the appearance of the camp and which will enhance the natural beauty of the camp site. The camp has been thoroughly cleaned up under the direction of the camp overseer. Nearly two hundred young trees have been planted along the camp streets. A large number of vines and shrubs have been purchased and put in by residents around their cottages. Grass seed is coming up in many of the new lawns. A majority of the people in camp are doing their share toward Uncle Sam's food campaign by planting gardens.

TAYLORSVILLE

That Celebrated Banquet

On Saturday evening, March 22nd, our new Community Hall was formally opened with a banquet and dance. Invitations were extended to the residents of all the Conservancy projects, and the employees of the Dayton office and shops, and each place was well represented. Guests to the number of 225 were seated at the table, and after dinner Mr. O. N. Floyd, toastmaster, called on many of the guests, who ably responded with interesting and enthusiastic toasts. About 10 o'clock all repaired to the Community Hall, where dancing was enjoyed until an early hour. Both halls were beautifully decorated and music was furnished by a Dayton orchestra. Taylorsville is very proud of the success of this occasion, which we hope to make an annual affair.

Daubenspeck in New Role

A dancing class with Mr. Daubenspeck as instructor and Mrs. Guthrie as pianist has been started with 18 members. They meet every Monday evening in the Community Hall.

The lower floor of the Club House has been arranged for a pool room, reading room and barber shop. Two pool tables were paid for by money received in the camp and have been installed, and a soft drink and ice cream stand will be started soon. This will add much to the convenience and pleasure of the community.

Keep Right On Sewing

The ladies of the Camp have been meeting every Thursday afternoon doing Red Cross sewing. As they have finished this work they continue to meet and bring their own sewing, believing that these meetings will do much towards encouraging the community spirit and make them better acquainted with each other. On Thursday after-

noon, April 17th, they held a very enthusiastic meeting in the Community Hall. Refreshments were served by Mrs. Trowbridge, Mrs. Tedrick and Miss McCarthy. A pleasant afternoon was enjoyed.

Cinderella from Ebenezer

On Thursday evening, April 3rd, an amateur company from the Ebenezer Methodist Church presented the play, "A Southern Cinderella," in our Community Hall. A large crowd was present and the play was enjoyed by all.

As Green as Englewood

During the past month much work has been done towards beautifying the Camp. Trees have been planted along the streets, shrubbery and rose bushes set out in many yards, grass seed sown in most of the yards, and everyone is busy getting his garden ready. The Association is glad to have the opportunity of co-operating, and appreciates the interest the community in general has shown in this work. All the nursery stock that was purchased was paid for by private individuals.

Religious

Rev. Le Fever of the Bonebrake Theological Seminary, Dayton, was with us on Sunday afternoon, March 23rd, and preached a wonderful sermon on the death of Christ.

Rev. Zimmerman of Vandalia preached a very interesting sermon on Sunday afternoon, April 6th. At both of these meetings the choir gave special numbers.

Society Notes

Mrs. Guthrie entertained Dr. and Mrs. Sayler and daughter of Huffman on Sunday, March 23rd.

Mr. and Mrs. W. W. Cole visited friends in Germantown on Sunday, April 13th.

Cletus Holahan was in Richmond, Ind., April 13th, visiting Mr. and Mrs. Kohnle.

We regret very much that we have lost from our midst Mr. and Mrs. Omer Hinton. They were leaders among the young folks and their presence will be greatly missed. They have gone to their former home in Celina.

Mrs. B. H. Petty has just returned from a two weeks' visit with her parents and friends in Indiana.

Mr. and Mrs. D. J. Holahan drove to Richmond, Ind., Sunday, April 6th, to visit her brother's family.

Tuesday evening, April 8th, Mr. Hauck, Camp Inspector, favored us with a very interesting picture show. Mr. Hauck has been very kind in securing pictures and assisting us in our community affairs, and his efforts are very much appreciated.

We have had more sickness in Camp the past month than at any time previous, but we are glad to report that all are rapidly improving.

HUFFMAN

Sinn Fein Celebration

A very pretty St. Patrick's party was given by the Social Committee in the Community Hall on Monday evening, March 17. As the guests entered the hall, a shamrock with the order of dances printed upon it was passed to each one as a unique favor. The hall was artistically decorated in shamrocks and green streamers, while a table laden with lemonade, fancy crackers, and potato chips proved a most popular spot all the evening. The Gyrating Orjazztra of Dayton furnished music and a most enjoyable evening was spent by all.

When Dorothy Was Two Years Old

Saturday, February 22, being the second birthday of little Dorothy Clawson, a charming birthday party was given in her honor by Mrs. Clawson, from 1:30 to 5 p. m. Mary Alice Mark sang "Happy Birthday" as she presented Miss Dorothy with a child's silver set from her little camp friends. Following games and a peanut hunt, delicious refreshments were served. The children found their places at the dining table, designated by small baskets of candy which served as favors. The table was beautifully decorated in pink and white, with a large birthday cake in the center bedecked with two pink candles. A most enjoyable afternoon was spent by everyone.

Heavy Rainstorm Can't Stop Sunshine Club

On March 26, Mrs. Verne Clawson entertained the Sunshine Club at her home. Not as many of the ladies were present as usual owing to the heavy rainstorm. Delicious refreshments were served.

An April Shower Helps to Open Orange Blossoms

When it was learned that wedding bells were soon to ring for Miss Louise Megley, a shower was given in her honor at the Sunshine Club on Wednesday afternoon, April 9. Mrs. Dubois entertained and had prepared delicious refreshments for the occasion. One corner of the Community Hall was gaily decorated in red, two large hearts pierced by an arrow being hung across it. Beneath the hearts was a large red basket containing gifts, all of which were both pretty and useful. While unwrapping her presents, Miss Megley received frequent showers of rice and confetti. We shall regret to lose her from our camp circle and our very best wishes will go with her.

We Also Hand It To Taylorsville

All of the Huffmanites who attended the splendid banquet and dance given at Taylorsville on March 22 heartily thank the people of that camp for the exceptionally pleasant evening spent with them. Although we could never fully repay them for all they did for us, we hope to give them a good time at our Camp on some future day.

Taffy

An old-fashioned taffy pull was given in Community Hall, March 31, 1919. Games were enjoyed by the children and a spelling match by the grown-ups (in which the words were spelled backward), while the taffy was being made. Everybody took a hand in the taffy pulling and a great deal of fun resulted. A large number attended and a pleasant evening was enjoyed by everyone.

Social Doings, Etc.

All of the Huffman campites are very glad to welcome Mr. and Mrs. Minton into our community life.

Mesdames E. S. Dubois, W. B. Hodge and J. M. Sayler were guests at an afternoon party given by Mrs. Durkin at the Walsh Camp in honor of Mrs. Durkin's mother, Mrs. Johnson, and Miss Smith of Brazil, Ind., on Thursday, March 19.

On March 12, sixteen ladies of the Sunshine Club were delightfully entertained at Community Hall by Mrs. Frank Bratton. Light refreshments, consisting of pie and coffee, were served.

Mr. and Mrs. Steadman, who have been spending the winter with their daughter, Mrs. Verne Clawson, left camp for Virginia on March 27. All of their camp friends regret to lose them.

E. S. Dubois was called to Kansas City, Mo., on March 21, owing to the death of his brother. We all extend our heartfelt sympathy to Mr. Dubois and his wife.

On each Sunday afternoon during this month, church services have been held in our Community Hall. Ministers and music have been furnished by the Dayton Y. M. C. A.

GERMANTOWN

Shakespeare at Germantown

On April 2 a candy sale was given by the school children. It was a huge success, and with the money raised they purchased a volley ball, and net, bats, and playground balls.

Following the sale the moving picture "Othello" was shown by Mr. Hauck. The senior students and several members of the Germantown High School enjoyed the evening with us.

Middletown Also Entertains

On Friday evening, April 11, an entertainment was given in the school house by four young ladies from Middletown. Following the entertainment dancing was enjoyed until 12 o'clock. Ice cream and cake were served by the committee in charge.

Personal

Mrs. Clara Bliss of Hyde Park was a week-end guest of her sister, Mrs. Chris Foehr.

Mrs. Clarence Heckman and children and Miss May Turner spent Easter with friends in Cincinnati.

Mr. and Mrs. Verne Clawson of Huffman were guests of Mr. and Mrs. A. L. Pauls on Easter Sunday.

On April 13, Mr. and Mrs. C. O. Shively and Mr. and Mrs. Henry Wehrley and children drove to New Paris and spent the day with friends.

Wednesday evening, April 9, Mr. and Mrs. Richard Carlton entertained at their home in honor of their son who had recently returned from over seas.

Sunday, April 13, Mr. and Mrs. Austin Philpott entertained Mr. and Mrs. A. L. Pauls, Miss Long and Mr. Ralph Lehman at dinner.

Mr. and Mrs. Alex MacKinnon spent the week end of April 12-13 at Mr. Porter-Shirley's home in Englewood.

EDITORIAL

Board of Editors

Germantown ..... Miss May Turner, C. O. Shively
Englewood ..... Mrs. C. W. Porter-Shirley, D. W. Henry
Lockington ..... C. H. Shea
Taylorsville ..... Miss Coral Benedict, W. D. Rogers
Huffman ..... Miss Mildred Goss
Hamilton ..... R. B. McWhorter

The Dandelion

We have all seen dandelions by the million, but how many of us have ever used our eyes on them? Did you ever notice that a dandelion will never stick its head up higher than it has to to reach the sun and the wind? On a shaven lawn the blossom squats close to the ground. In tall grass it will grow on top of a stem 2 feet high or more. It wants to reach the wind which blows its seeds away to fresh fields.

Did you ever notice that the plant lifts its blossoms straight up to the full height of their stems when they first open? When the petals wither and the seeds begin to swell, the blossom shuts tight and stoops to the ground, the stem bending low to bring it there. It stays thus closed and crouched until the seeds are ripened, then straightens up again to the full height of the stem and opens up its feathery sphere for the seeds to sail away on the wind.

Finally, did you ever notice that a dandelion shuts its blossoms up and goes to sleep every evening, opening them up again to the sun on the following morning?

We have all seen a million dandelions. How many of us have used our eyes on them? How many of us have ever seen these things which have gone on under our eyes thousands of times?

The story has its moral. If you have never seen these performances of the dandelion, the commonest flower that blows, isn't it likely that there are lots of things about your work which you haven't seen and which it would pay you to see?

LOCKINGTON

Another for Taylorsville

The Taylorsville party of last month set such a high mark as a camp entertainment that it will be difficult for any other camp to make a better record. Those who attended report the affair as nearing perfection.

Does Englewood Want a Goat?

A goat has been presented to W. J. Smith, Jr., by some of his admiring friends in the bunk house. What to do with it became a question until someone suggested that it be made the baseball team's mascot. If that Englewood bunch think they can "get" it, let 'em come on.

Looks Like Lockington Again

The Victory Liberty Loan campaign is being conducted in conjunction with the Shelby County Organization. Speakers from the Piqua district addressed the men at a noon meeting Tuesday, April 22. The sales for the first day totaled $4650, and the indications are that Lockington will again have a record sale.

Jones' Birthday Celebrated With Epicurean Collation

On April 12, while Mr. Jones was quietly celebrating his birthday at his home, the office force and their wives dropped in to help him, presenting a small gift as a remembrance. Mrs. Jones had not been forewarned but rose to the occasion with a lunch fit for old Epicurarius.

Matrimonial Mystery

Rumors that are not denied have convinced the camp that one of the men in the office is to be married in the near future. Such little details as the time, the place, and the girl have not been published, but it is hoped that next month's issue of the Bulletin will clear up the mystery.

Knocking Chip Off Englewood's Shoulder

The rainy weather has interfered with the ball players' practice but has not dampened their enthusiasm. A diamond has been staked out and will be used as soon as the weather will permit. Englewood's challenge will not have to be sent to the whole world to be taken up. When the organization has been completed Lockington will be glad to book games with Englewood or any Conservancy team.

Personal

Mr. Roland West, Resident Electrician, has resigned to go into business in Sidney. His place has been taken by Mr. C. M. Gudgeon, who has been transferred from the Dayton work. Mr. Gudgeon moved his family to Lockington last week.

HAMILTON

Three Excited Men

Messrs. Schrader, Davis and Roush were highly excited last week by a rumor that there was a house for rent in Hamilton. It was only a ruse.

Two More Population Notes

Mr. and Mrs. Fred Hill are the proud parents of a nine-pound boy, born recently at Mercy Hospital.

Primore Taliaferro, derrick runner on the drainage work, is the very enthusiastic father of an eight-pound girl, which arrived the latter part of March.

Social and Personal

Division Engineer and Mrs. C. H. Eiffert were hosts at a delightful entertainment given at their home on North "F" Street the evening of April 1st in honor of Miss Gladys Truesdell of Chicago, a sister of Mrs. Eiffert. The event was greatly enjoyed, a large number of guests being present.

Mrs. R. H. Tweedy, of Courtland, Ala., is visiting her daughter, Mrs. R. B. McWhorter, on Elvin Avenue.

Timekeeper Harry V. Waer has returned to duty, after having been laid up with the flu for several days.

The bowling meet of April 15th was featured by two 200 scores, Schrader rolling 211 and Eiffert 201. Schrader's score is the high score of the season, which honor has heretofore been held by Mr. Eiffert with a score of 206. The season will end April 29th.

Our night superintendent, John D. Allen, was painfully though not seriously injured in a traction accident which occurred between Hamilton and Cincinnati on the 13th instant.

OUR JUNIOR EDITORS

The contributions immediately following are from our Board of Junior Editors, representing the various camp schools. They beat us old hands—don't you think?

Huffman

Our Candy Sale. We did not have any school yard furnishings, so we decided to earn the money by a candy sale, and buy them.

The girls worked in groups at three different houses. Twenty pounds was the result of two afternoons' work. There were several different kinds of candy made and each pound sold contained a mixture of all. We charged sixty cents a pound for the candy.

The boys sold the candy. They made posters to put on the bulletin board so that every one would know about it. Several of the smaller boys went around the camp telling people of it. We had the sale Thursday evening, April 3, at 7:30. At the same time we had "Othello," a moving picture. Seventeen dollars and thirty cents was cleared.

Elizabeth P. Mark, Fifth Grade.

Taylorsville

A School Hike. During the second week of April the children took a hike over the works and back through the woods. They were very much interested in the sluicing and drilling. On the hillsides were scads of wild flowers. We found and identified anemone, spring beauties, violets, dog-tooth violets, jack-in-the-pulpit, Dutchman's breeches, and trilliums.

Thursday morning, the school gave an Easter Party for all the children at Camp, at Community Hall. Ice cream and beautifully colored eggs were served by the Domestic Science Girls. The children enjoyed their new playground balls, and had several contests with them.

Agnes Hinton, Fifth Grade.

Dayton

Talking about "scads of wild flowers," the Dayton editor was also out walking last Sunday afternoon and found 4,356,000 dandelions in one field, by actual count. Particulars next month.

G. L. T., Fifth Grade.

Englewood

Old Clothes Campaign

One of the most interesting events of the past month was the Old Clothes Campaign. The girls of Camp Engle-

wood School collected 81½ pounds of old clothing and the boys collected 35½ pounds. Besides that the girls collected $12.02 for overalls and shirts for the Belgians.

Caryl Rupe, Sixth Grade.

School Gardens

Fifteen children have started school gardens. They, with those who have home gardens, will wear badges given them by the government, which means they belong to the United States School Garden Army. Prizes will be given to the best gardeners.

Kenneth Swallow, Seventh Grade.

Swat the Fly

Now that we have conquered the Germans, we must tackle another enemy. We should swat the fly every opportunity we have. In order to encourage the killing of flies, we are awarded a good citizen star for killing and bringing to school ten flies.

Ivy Saltmarsh, Seventh Grade.

Germantown

A School Breakfast. The past few weeks the girls in the Senior Cooking Class have been preparing dishes suitable for breakfasts. We thought it best to let our mothers and friends be judges as to our ability as future cooks, so we invited them to a sample breakfast.

On March 27 three of the girls entertained Mrs. Heckman, Mrs. Wehrley, Mrs. Vulich, and Miss MacDonald. Yellow and white was the color scheme. Jonquils were used for table decoration.

The following menu was served:

Grape Fruit

Cream of Wheat — Cream

Puffy Omelet — Toast

Coffee

Cream — Sugar

We are now preparing luncheon dishes.

Florence Heckman, Seventh Grade.

Clean-Up Day. Wednesday, April the ninth, is a day long to be remembered by the school children of our camp. That morning we came to school armed with brushes, pails, and scrub rags, for it was Clean-Up Day at the school. Each child was assigned duties. The small children wiped the woodwork, while the older children washed the windows and scrubbed the porches. My! how we all worked. By noon the school room was all spick and span.

In the afternoon the doors were closed and our whole attention was turned to cleaning the yard. The yard was raked and the waste material picked up.

We then went into the woods to gather wild flowers and ferns and came back tired but happy.

Bertha Vulich, Eighth Grade.

DAYTON

La Junta Begins Study of Portuguese

La Junta held a special banquet at Henricis on the evening of April 11. About 25 were present, the wives of members being included among the guests. The programme of speeches and music which had been arranged by Professor Woodward and Mr. Matthes was entertaining, the only draw-back being the difficulty which certain members experienced in distinguishing Spanish from Portuguese. They attribute the difficulty to the Bolshevism of the editor's pronunciation.

Herbert A. Bell, who went abroad last August with the Army, returned to his home in Dayton on April 18. He was with the 83d Division, his work being connected with the postal service at headquarters at Le Mans, France. His wife was one of the patriotic women who entered the service of the Conservancy during the shortage of help in the headquarters office last summer. Her work was in the drafting department.

Miss Erma Heater, pillar of the Paymaster's Department, is to be married on May 14 to Mr. E. C. Brumbaugh of the Dayton Savings and Trust Co. As a near neighbor of Miss Heater for many weeks past, we are able to state that in the matrimonial lottery, Mr. Brumbaugh has drawn one of the prizes.

An interesting letter from Sergeant Harold Drake of the A. E. F. in France, has been recently published. Sergeant Drake is a nephew of Marc Bridge of the Legal Department.

Englewood Imagination Equals Its Pep

Englewood, jealous of the Great Germantown Fish Story, published in our last issue, sees Germantown and goes her one better. It is a mud turtle this time, "a ten-inch turtle." McCurdy claims that one of these "critters" was scooped up by a dragline bucket in the Englewood borrow pit, dropped into a car, dumped into the hog box, washed into the sump, whirled through the dredge pump and a thousand feet of pipe, and blown from the discharge pipe into the hydraulic fill pool, where it calmly rolled over, swam ashore and walked off. The yarn does credit to its source. Come on, Taylorsville, you're next.

An unusual bit of work at the Huffman Dam was the removal of 25,000 cubic yards of rock by the big dragline from one set-up. The rock cut here at its deepest place, the bottom of the hydraulic jump pool, will be 60 feet deep.

An interesting matter connected with the selling of five million dollars' worth of Conservancy bonds, noted not long since, concerns the manual labor of signing those documents. It is very great. To sign each bond singly in the ordinary way, in the case of the ten million dollars' worth originally sold, it is estimated, would take the labor of the president and secretary of the Board of Directors each nearly one week, working eight hours a day. To reduce this labor an ingenious machine has been invented, called the "Signagraph." The business end of it looks not unlike an old-fashioned tooth-harrow, the teeth of the harrow being some eighteen writing pens, which move simultaneously following the movement of a master pen, held in the fingers of the officer who signs the bonds, and which reproduces his signature eighteen times at once. Eighteen separate bonds are slipped under these eighteen pens, one under each, by young women attendants of the machine. Handling the master pen is a little different from working an ordinary one, but the knack is soon acquired, though the signatures are not quite as smooth and clear as the ordinary signatures of the writer. It took Mr. Kuhns, Secretary of the Conservancy District, two and one-half hours working with this machine to sign ten million dollars' worth of bonds, the amount of the first Conservancy issue. The headquarters of the controlling company, called the "Signagraph" Company, are on Broad Street just off Wall Street, New York, where they occupy one floor of the building, operating several machines. They do no advertising, permit no photographs, and sell no machines.

At Lockington

The patient "dinky" snorts and grunts,
As up the grade it gamely shunts
The dump car loaded to the brim
With gravel—to the hopper's rim,
Where Big Boy at attention stands,
With steel bar gripped in ebon hands,
And at the given signal swings
The heavy bar, and bams and bings—
(His swarthy brow with dew-drops flecked)—
The hooks that hold the load erect
Until it totters, creaks and sways
And grumbles, groans and shrieks and brays—
Till, suddenly, with grinding roar,
Like sound of big guns in the war,
Sideways it rocks, with added din,
And dumps the gravel in the bin!

—Elldee in Dayton News.

Many were interested in the exhibit of pictures showing the Conservancy work during the past year, which was shown recently in the windows of the Rike-Kumler Company in Dayton. The exhibit was made at the suggestion of Mr. Rike of the Company. The selection and arrangements were due to G. H. Matthes and Louis Dubois. The exhibit attracted much favorable comment. The thanks of the District are due to the Rike-Kumler Company for their suggestion and for their co-operation in the carrying out of the plan. The exhibit is being shown in the other cities of the valley.

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THE MIAMI CONSERVANCY BULLETIN

PUBLISHED BY THE MIAMI CONSERVANCY DISTRICT

DAYTON, OHIO

Volume 1 May 1919 Number 10

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Subscription to the Bulletin is 50 cents per year. At news stands 5 cents per copy. Business letters should be sent to L. F. Wilcock, Assistant Engineer, Miami Conservancy District, Dayton, Ohio. Matter for publication should be sent to G. L. Teeple, Miami Conservancy District, Dayton, Ohio.

The Victory Liberty Loan

The campaign for the Victory Liberty Loan is on. The total amount to be raised is four and one-half billions of dollars. The quota for Montgomery County is $6,404,000. The quota for the Conservancy has been set for $100,000. We went over the top before and we shall surely do it again. If you have not already subscribed, now is the time to get in line. Saturday, May 10, is the last day that you can buy a bond.

Financially the Victory Loan is far more attractive than the bonds for the Fourth Liberty Loan offered for sale last fall. They are in fact not bonds, but notes, to be paid off at the end of four years. If it wishes, the Government may pay them off after three years. During the interim they bear 4¾% interest. This is a decided increase over the 4¼% paid by the bonds of the Fourth Liberty Loan. This interest is payable semi-annually.

Another attractive feature of these notes is the easy terms of purchase. Fourth Liberty Loan bonds had to be paid for inside of a little over three months. Payments for the new notes are six in number, distributed over a period of six months. Those of us who found it hard to meet installments on bonds last fall, will find the burden this time is cut in two.

The Victory Loan sales for the District will be in charge of H. G. Sibley, one of the Conservancy men from the army, who has recently returned from France. Mr. Sibley was one of the first men to leave Dayton for the front. He served first in the Ambulance Corps and later joined the Engineers. In all he was over seas for a period of nearly two years. He has come back hale and hearty and his first job on this side is going to be to jump in and help finish what he helped all but finish over seas. He will be assisted in his work by the following corps of men:

Englewood—H. S. R. McCurdy, Arthur H. Kent.

Taylorsville—H. M. Sherwood, J. E. Eberly, W. D. Rogers.

Huffman—C. C. Chambers, Verne Clawson, Dr. John M. Sayler, H. W. Minton, E. H. Baker, Ben H. Rogers.

Germantown—Alexander Mackinnon, Arthur L. Pauls.

Lockington—C. H. Shea, W. J. Smith, Jr., H. T. Meiners, L. J. McWilliams, J. G. Applegett.

Hamilton—R. B. McWhorter.

Dayton—Warehouse—John F. Braun.

Dayton—Shop—J. T. Hall.

Erie and Big Four R. R.—W. R. Yount.

Baltimore & Ohio R. R.—Wm. D. Kramer.

Ohio Electric R. R.—W. R. Yount.

The work at Hamilton and Lockington will be under the Victory Loan Organizations of the local counties.

The Bulletin wishes to Mr. Sibley and to all the salesmen at the various Conservancy Divisions the greatest success in their patriotic work. It urges every Conservancy worker to stand by and help the Victory Loan Drive over the top, and pledges its own assistance to that end.

Miami River Improvement Through Dayton

This work is now in full swing in its second stage. The first stage carried it from above the city to a little below the mouth of Mad River. In this stretch the material was transported as well as excavated by the large dragline machines employed, a large part of the material being moved twice. During the second stage the loading dragline is mounted upon a special scow, and the excavated material is transported to its place in spoil bank or levee by means of a steam tug and scows. The dragline was mounted on its scow for the first time on April 28, and immediately set at work excavating. The channel section of the small timber dam at the mouth of Wolf Creek, to provide water to float the loaded scows, was closed on April 23. An account of the river improvement through Dayton is published in this issue of the Bulletin.

Hydraulic Fill at Englewood

This work, which has now been in operation for some time, differs somewhat in method from that at Taylorsville. (See Bulletins for November, 1918, and March 1919). At Taylorsville the material in the "borrow pit" is excavated by undermining it with a powerful jet of water. It is transported from the borrow pit to the dam by pumping it (in a thin mixture of earth and water) through a steel pipe. At Englewood the material is excavated from the borrow pit by a dragline excavator, loaded upon dump cars, and transported to a "hog box" next the damsite by a locomotive. Dumped into the hog box (see illustration on outside front cover page), it is washed down the sloping sides and bottom of the box by powerful jets of water into a "sump," whence it is pumped to the hydraulic fill pool on top of the damsite as at Taylorsville. The Englewood arrangement is a modified form of what is known as "semi-hydraulic fill." For the Englewood situation, the borrow pit there being in the river bottom instead of on a hillslope as at Taylorsville, excavation by a hydraulic jet is impossible, since a large part of the material to be excavated lies below ground water level, where a water jet could not reach it. A full account of this work will appear later.

"The Man Who Goes Through the Motions"

The curse of routine is that is deadens the thinking faculties. Unfortunately, most work, especially in these days, is routine. A man starts to do a thing a certain way. He succeeds in doing it that way and he follows up his success. He repeats. Others imitate him. They repeat. The operation becomes standardized. It becomes routine—habit—and correspondingly hard to break. We do it with our eyes shut, although the circumstances have quite changed. The square hole has become a round hole, but we use the old square peg to fill it just the same. Thus the paths of Blackstone's cows through Blackstone's pasture become the streets of Boston—Lincoln Highways for cows, but for twentieth century Bostonians altogether too narrow, crooked, and dirty.

All this has application to us workers of the District. We all follow routine, and routine, followed long enough, will make a dead spot in any brain. It is safe to say that there is not a man on the job, up to the Heads of the Works, who, if he looks, will not sometimes find himself simply going through the motions—turning a mill without wheat—following Blackstone's cows. We forget that the best way of doing a thing—anything—building dams or blacking boots—has never yet been discovered. It is up to us to find it. God gave us gray matter for just that purpose. It is up to us to use the gray matter.

Hand Fire Extinguishers Prove Worth

The value of the hand fire extinguishers, which are installed in the buildings at all the camps, was demonstrated at Huffman on Saturday, April 5, when one of the 24-man bunk-houses, northeast of the main road, took fire. The fire started from a kerosene stove in a corner room and when discovered, flames were bursting out of the door and windows of this room. Luckily, Messrs. Chambers and Clawson were only a short distance away. They gathered men together armed with seven or eight of the fire extinguishers from nearby buildings. The windows were broken by throwing missiles at them. Men then crept up to the windows and turned the hose of the extinguisher through the openings. The fire was put out in three or four minutes by this means, with a damage amounting to only about $25.00.

The extinguishers are of 2½ gallon capacity and of the usual type, which operate by breaking a bottle of sulphuric acid into a solution of bicarbonate of soda. The mixture produces carbonic acid gas, which by its pressure forces out the solution, charged with gas, through the nozzle. This gas is a very effective extinguisher of fire, far more so than water, and by its action smothers the flames. It is practically certain that without the use of this apparatus, the entire bunk-house would have been burned to the ground.

New Technical Report Out

Technical Report, Part VI, entitled "Contract Forms and Specifications," has been received from the printer and is now available for distribution.

The object of issuing this volume is to put into permanently accessible form the legal documents and specifications for building the dams and channel improvements, together with the information that was furnished to bidders, including itemized statements of quantities of work required in the various projects of the District.

The report is accompanied by an atlas, 15 by 11 inches, containing 139 selected contract and information drawings, illustrating the more important features of the work.

The price of the report is 50 cents and that of the atlas $1.50.

Employees and others who have business at the Taylorsville Dam will do well to note that the Baltimore & Ohio Railway has now made Taylorsville a regular stop for trains 55 and 56. Train 56 leaves Dayton at 9:40 a. m., and arrives at Taylorsville at 10:05 a. m. Train 55 leaves Taylorsville at 2:45 p. m., and arrives in Dayton at 3:15 p. m. It is expected that employees will use this train rather than an automobile when the nature of their errand permits them to do so.

Erosion and Deposit of Sediment as Related to River Improvement

Remarkable Effects Produced by Changes in Sediment-Carrying Capacity Due to Changing Velocity of Flow.

The methods commonly followed in the improvement of the channel of such a river as the Miami in general consist in deepening the bed, in protecting the banks, and in building levees to restrain the heavier floods. To understand the reasons for the various features of such an improvement it is necessary to understand the principles which underlie a river's behavior. This is especially true in the case of streams like the Miami and its tributaries, which are subject to sudden flood, and which occupy broad flat valleys in which they wind back and forth in a sinuous and apparently aimless course. The aimless is only apparent. In reality the location and shape of the river channel are determined by a few fundamental laws which it is necessary to understand.

One of these laws is that stated in one of its common forms in the March Bulletin in the article on the "Action of the Retarding Basins." Put mathematically, it is that in general the carrying power of the water in a river, as exerted upon materials like the sand, silt, and gravel which compose its bed, varies approximately as the sixth power of the velocity. This means that if the current of a river, flowing at a certain velocity, is just able to pick up and roll along its bottom a pebble of a certain weight, and if the velocity of the water be then doubled, it will be just able to pick up and roll along a stone of approximately sixty-four times the weight of the pebble.

This result is arrived at by mathematical analysis. Observation and experiment indicate that the actual carrying power of water does not vary in quite so high a ratio to an increase in velocity. They do indicate, however, that the ratio is very high; so high that a slight increase in velocity will greatly effect the power of a river to transport sediment. Experiments show that with a bottom velocity of 6 feet per second, which corresponds to a stage in the Miami River of about 16 feet, the water will roll along its bottom stones approximating two inches in diameter. If we accept the mathematical law as above stated, an increase of the bottom velocity by only four-tenths of a foot per second, which would correspond to a rise of the river of something over 2 feet, would cause the river to roll stones along its bottom weighing one and one-half times more than the two-inch stones it was able to roll before.

Where the bed and banks of a river are made up of loose material, as is very markedly the case in the Mississippi, and to a less degree in the rivers of the Miami Valley, this law gives rise to remarkable phenomena. With every rise in the river the increase in velocity greatly increases the carrying capacity of the water, with the result that the loose materials along the banks and bottom are picked up and carried downstream. When the river falls this material is again dropped. Since the river is continually rising and falling as the rains come and cease, the river is continually changing the conditions of its channel, picking up material in one place and depositing it in another. Mississippi river pilots, as is well known, may find a sand bar tomorrow where last week they found 15 feet of water.

A river tends continually to become more crooked. This follows from the basic law first stated. The water flowing around a bend in the river tends by centrifugal force to run into the hollow of the outside bank, and since the swifter it flows the more centrifugal force it has, the swiftest water concentrates against this outside bank, which will thus be dug away by the river more than any other portion of the channel. Swinging around this bend, the main current crosses the river into the hollow of the reverse loop, where a similar action takes place. Thus both pockets of the "S" become dug out more and more, the river channel swings further and further, first to right and then to left, running thus in an ever more crooked course.

It is aided in this by action of another kind on the inner side of the bend. The swifter water, running to the outside, leaves a mass of comparatively dead water on the inner side of the curve. Swifter eddies bearing sediment run into this mass of slower moving water and drop their load of material. This builds up on the inner side of the curve a broad bar. Thus the river builds up one bank, while it eats away the other.

In rivers like the Mississippi this tendency is carried to remarkable extremes. As the channel is thrown into deeper and deeper loops the land is left in narrow necks and peninsulas between them. Every now and then the river cuts off one of the necks and the peninsula becomes an island. Having cut across the neck, the river, of course, abandons the loop, which becomes a stretch of dead water. Eddies from the river running into the dead water at the ends of the loop slacken speed and drop sediment. These ends thus become eventually filled up, cutting the loop off entirely from the river, except at times of extreme high water. The loop thus becomes a new-moon-shaped lake. The valley of the lower Mississippi exhibits many of these lakes. The rivers of the Miami valley, in places exhibit the same phenomena.

The swift water running around the outside of a loop not only eats away the bank, but the adjacent bottom as well. But in cutting across the river to get from one bend into the hollow outside bank of the next, the water for a little distance must flow in an almost straight course. While so flowing there is little or no centrifugal force tending to throw it towards either one bank or the other. The course of its flow will be determined, in fact, by the nature of the materials in the river bed. When the river rises and the velocity of the water therefore increases, it will dig out the bend where these materials are softest. When the river falls again, it will deposit other material in this place. The next time the river rises it is likely to find the softer and less resisting material at some other part of the bed where finer particles have been deposited. In this manner, as time goes on, with successive rises in the river, the bed will be dug out first here and then there. Thus in the bends of the river the

erosive power of the water is always concentrated in one place; that is, at and next the outside bank, while in the straight portions of the channel between the bends, this erosive action will be directed first on one point of the bed and then on another. The result will inevitably be that in the bends the channel will be dug deeper than it is at the straight crossings. Observation shows that this is the case. The "thread" of the stream is always deepest next the outside bank of a bend and shallowest at the crossings.

Where the river widens out into a broad expanse it will form a bar or shallow, just as if it ran into a lake, as described in the article referred to on Retarding Basins. This bar may grow into an island.

It goes without saying that any improvement in the river channel should be carried out in such a way as to be as nearly permanent as possible. It is clear also from all that has been said that a river like the Miami has strong objections to being confined within any permanent channel whatever. It is always on the job digging here and depositing there. It behaves like some living thing, some burrowing animal which, whenever you shut it up, is perpetually seeking to dig out. In blocking these tendencies we must be guided by the laws which have been laid down in the foregoing paragraphs.

Thus, since the outsides of the bends are always weak places, and continually worn away, they must be protected. This protection can be obtained by lining these banks with stone or concrete. It is evident that the insides of curves do not need any such protection, because the tendency there is not to tear down, but to build up. In these places occasional dredging of deposited material may be necessary.

We have seen that at the crossings where it runs from one bend into the next, a river channel is shallower, while in the bends it is deeper. It is clear that in the improvement the channel in the crossings must be deepened. This will not only enable it to carry more water, but it will correct the tendency of the river channel to wander from side to side in the manner which has been described. Thus, once properly deepened, the channel will tend to maintain itself. The deep places in the pockets at the bends should be filled up so as to make the river channel throughout as uniform in shape and ability to carry the flow as is possible; because evidently under these conditions the tendency of the river to eat away and to deposit materials will be the minimum.

The same rule applies to wide expanses in the river. At these points a channel should be cut through of the standard shape and size, on a course which will lead from the originally narrower portion above to that below, by a route which is the most natural for flowing water to take between the two points. It is the following out of this rule which has led to questions, by people who have not understood the matter, as to why the new levee below Herman Avenue bridge in Dayton is built out from the old levee a considerable distance into the river bed. It is built out there so as to make the river bed at this point of the standard shape and size in order to secure the uniform conditions above referred to, thus to confine the water in its flow through the broad expanse extending from Herman Avenue bridge to below the mouth of Mad River, so that cross currents cannot lead to damage of the finished slopes and banks.

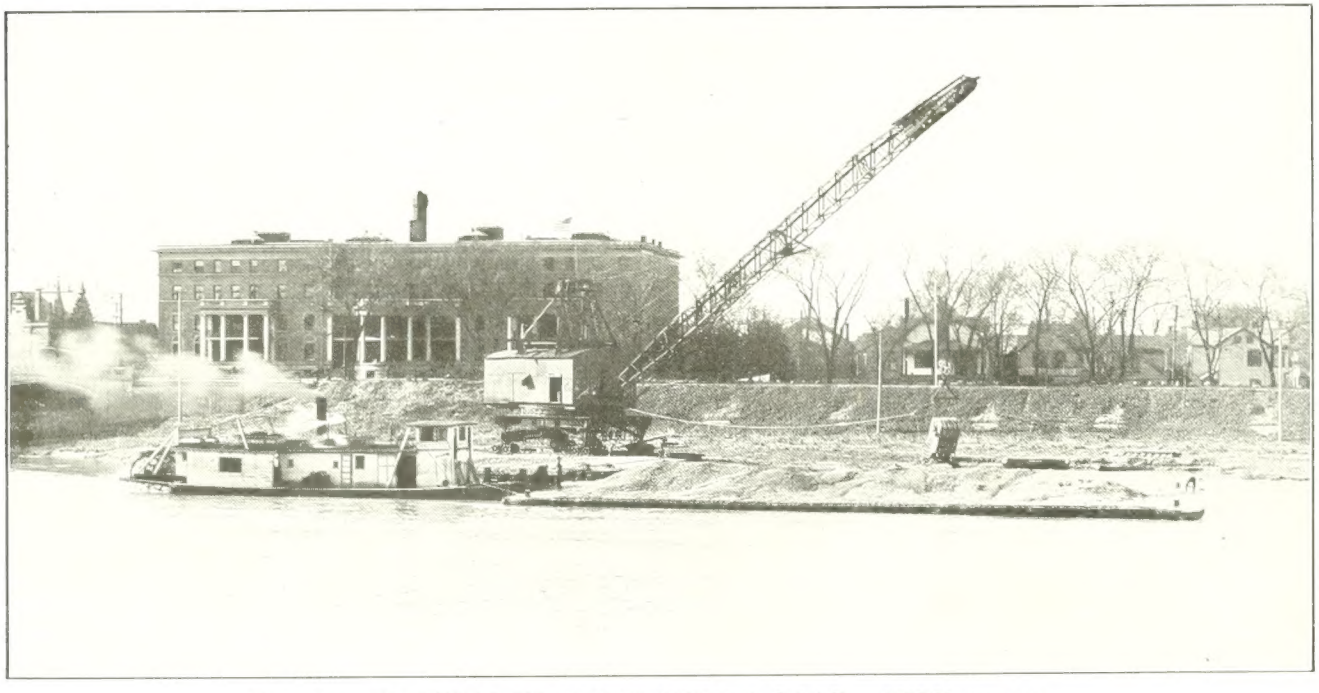


FIG. 131—STARTING UP RIVER WITH A LOAD. APRIL 21, 1919.

The steamer is of the standard Ohio River pattern and is pushing a loaded scow. The scow is 40 x 120 x 6 feet in depth. The load brings the deck within a foot of the water, being in this instance about 250 cubic yards of earth. The dragline excavator is just beginning to load a second scow, which can be distinguished behind the first. The material is unloaded by a second dragline similar to the one seen here, and dumped into one of the Mad River levees. (See Fig. 134.) The steamer can make about one round trip an hour under favorable circumstances. Work is carried on by both night and day shifts.

The reality of this danger will be clear to any reader familiar with the conditions in the Miami River bed in the locality referred to, as they existed before the flood of 1913. The irregular deposit of sediment, due to eddies in the current, had been carried to such an extent as to form islands of considerable extent, on which grew bushes, small willows, and even large trees. Some of these islands are shown in Fig. 129. The effect of such islands in damming up the river in times of flood, by the lodging of driftwood, etc., and in directing destructive cross currents against adjacent levees, will be at once evident. With a channel brought to standard shape and size, which by concentration of flow will be more nearly self-maintaining, the growth of such dangerous obstructions will be impossible.

In this article the effects upon a river have been shown, due to changes, with varying velocity of the current, in its ability to erode its bed and to transport sediment. The laws governing variation in river velocity, and their direct effect upon the improvement, will be discussed in a later issue.

Improvement of the Miami River Through Dayton

Excavation by Draglines of More Than 2,000,000 Cubic Yards from River Bed. Material is Moved by Scows and Steam Tug.

The flood of 1913 produced a maximum flow in the Miami River at Dayton of about 250,000 cubic feet per second, about 2½ times the capacity of the old channel up to the top of the levees. To prevent such a flood in the future it was planned to build four dams on the river and its tributaries above the city, behind which the flood waters will back up, and to enlarge and improve the river channel through the city. The Stillwater flows into the Miami just at the northern limit of the city. Mad River and Wolf Creek also flow into the Miami within the city limits. This requires different channel capacities in different portions of the city to provide for the increments of flow thus received. These capacities are as follows:

Above Mad River 75,000 cubic feet per second.

Between Mad River and Wolf Creek 110,000 cubic feet per second.

Below the mouth of Wolf Creek 120,000 cubic feet per second.

To properly provide for the flow as regulated by the dams required that the river channel be deepened, that the irregularities in its course be replaced by smooth curves, and that the levees be made wider and higher. The work thus planned will extend for 8½ miles along the river. The necessary excavation will amount to more than 2,000,000 cubic yards, about half of which will go into the improving of the levees, the remainder being used to fill in certain tracts of low ground behind the new levees. The present article will deal only with that portion of the work above the mouth of Wolf Creek. A map of this section is shown on page 152.

In accordance with the principles enunciated in the preceding article in this Bulletin, the shape of the improved channel is made as nearly uniform as is possible for each of the 3 sections of the channel indicated above. A typical cross section is shown in figure 132. It gives a total width from foot of levee to foot of levee of 600 feet, and a total height from the river bottom to the top of the levee of 28 feet. The bottom of the channel is level for a width of 75 feet on each side of the center line, then rises on very flat uniform slopes each way to the foot of the levee. With this section of channel a flood 40 per cent greater than that of 1913 will still fall 3 feet short of the tops of the levees.

The river channel before the flood of 1913 had been improved by various means, including levees, stone or concrete walls, and stone or concrete "revetments" to protect the inner slopes of the levees in various places. Some of these old improvements had been so carried out that they could well be made part of the new plan, and this was done wherever it seemed best, in order to reduce expense.

In accordance with the principles of the river improvement discussed earlier, the channel bottom next the outside levee in the bends of the river will be protected by concrete "revetments." These revetments are really flexible concrete mattresses so constructed that if the river starts to undermine them at the foot of the slope, the mattresses will drop into the excavation to protect the threatened locality. This flexibility is obtained by making the revetment of concrete blocks 5 inches thick, 2 feet long, and a foot wide, these blocks being strung on steel wire cables so as to present a smooth, yet flexible, paving for the channel slope adjacent to the levee. The levee slope itself will not have the flexible revetment, but will be paved along its lower portion with continuous concrete pavement. The location of these revetments is clearly indicated on the map, figure 133, as are also the locations of the new and old levees, and the new and old walls.

The new walls just referred to are used in various places to carry up the old walls to a higher elevation, to top out the upper edge of the old revetment, or to top out and reinforce the new levee,

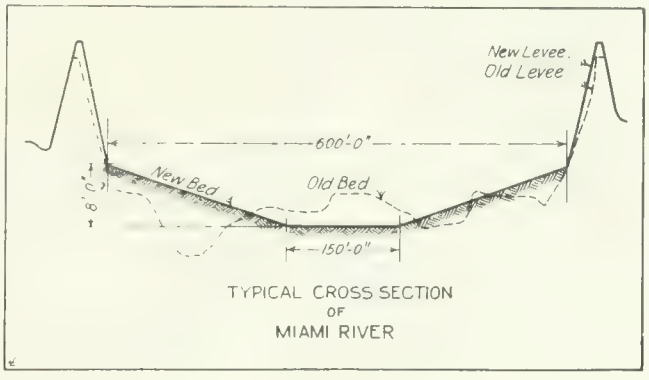


FIG. 132

The dimensions given all vary somewhat at different points in the river as demanded by circumstances. This is an actual section taken a short distance below Island Park. Below the mouth of Mad River and again below the mouth of Wolf Creek the width from foot of levee to foot of levee is successively increased. The 150-foot level strip of bed along the center is not varied, however, except in a few special instances. The standard depth from the bottom of the bed to the top of the levee is 28 feet.

that type of construction was adopted over the river, which, combined with the city, will effect the improvement with the greatest economy.

The material constituting the improved channel bed and the river slopes of the levees is excellent, being mainly composed of gravel, which fortunately here occurs in the old bed of the river.

The machines used for the river excavation are two Class 175-B Bucyrus dragline excavators with 3½-cubic yard buckets, and booms of 125-foot and 135-foot lengths respectively. They are very powerful machines, weighing over 175 tons each and equipped with electrical machinery developing in all about 350 horse-power. They can excavate anywhere within a circle of about 300 feet in diameter, struck from the center on which the boom swings, and will excavate to depths as low as 50 feet below the level on which the machine stands. Their advantages for such work as river excavation were indicated in an article in the Bulletin of last October. They were selected after a careful comparison between all known methods of carrying on the proposed work, as being the best adapted and most economical and efficient for the purpose. Their chief advantages are their wide reach and their ability to dig far below the level of the machine, these characteristics especially fitting them for river work. In a river the size of the Miami, they can place a large part of the material to be excavated in its final resting place in levee or bank by simply swinging the machine on its pivot and dumping the load. Where the distance from the point of excavation to the levee under construction is too great to be reached by simply swinging the machine, the difficulty can be overcome by handling the same material twice with the dragline. Thus below Herman Avenue Bridge, the dragline moved down the river parallel to and east of the center line, excavating the middle portion of the river channel and depositing the excavated material in a long windrow at the east limits of the boom's reach. The same machine later returned along a course parallel to and east of this windrow, picked the material up again and dropped it into its final resting place in the new east levee of the river. By such a process of double handling, these dragline machines can drop material over 500 feet from the point of original excavation; by triple handling between 600 and 800 feet. Such double handling saves the use of machinery for transporting the excavated material, such as scows, cars and engines, or teams and wagons, which would otherwise be necessary.

A considerable part of the material, however, cannot be thus disposed of near the point in the river from which it was excavated, due to the fact that through the main part of the city adjacent buildings, streets, or other improvements do not leave space for dumping the excavated material. This is true for a large part of the distance from the mouth of Mad River to a point below the Washington Street Bridge. This material will have to be transported along the river and dumped on the low ground behind the levees at one or other of several places where such ground occurs. Various means of such transportation were considered, such as by hydraulic dredge, by dump cars and locomotives running on embankments built within the levees, and by scows and steamboat on the river. The latter plan is for Dayton the most economical and was accordingly adopted. To do the work three scows were built, 40 by 120 feet in size, and which draw, full-loaded, 5 feet of water. As the river at an ordinary low stage does not provide sufficient depth for these boats, a temporary dam has been built just above the mouth of

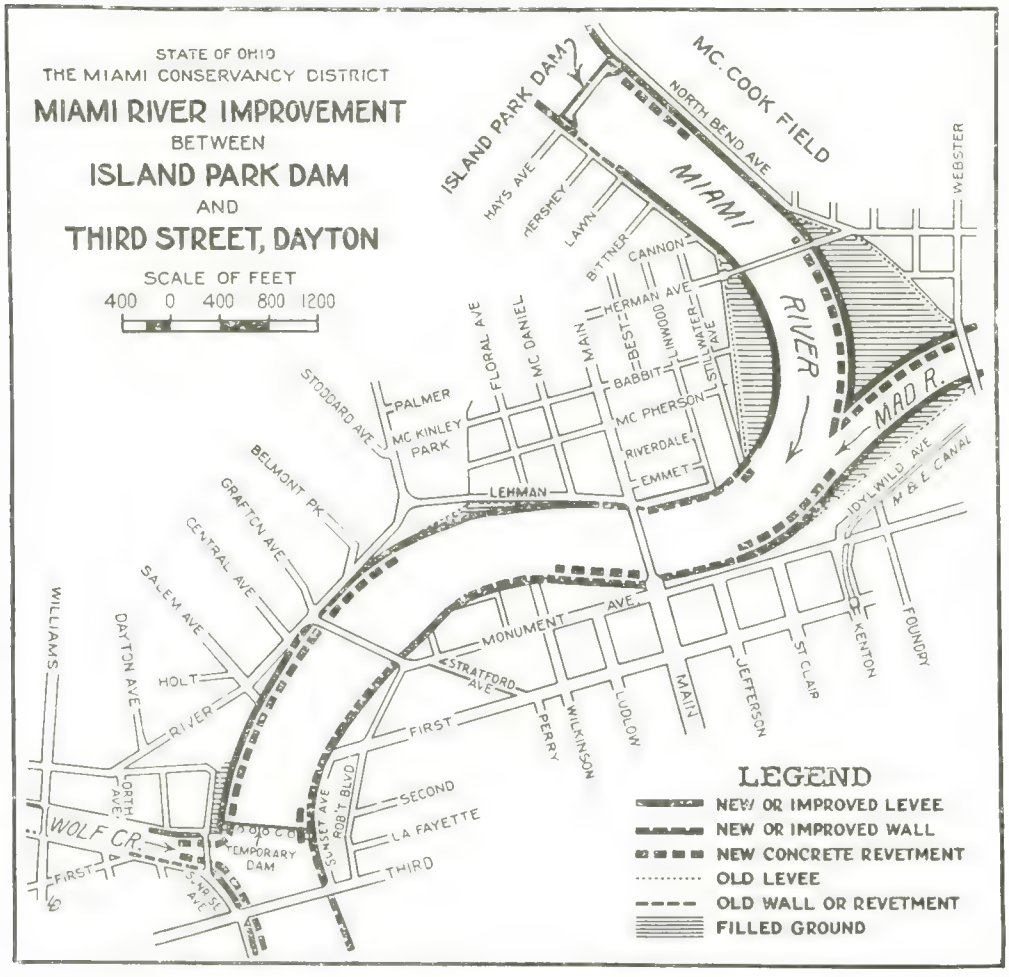


FIG. 1. MAP OF MIAMI RIVER IMPROVEMENT

Wolf Creek, which raises the water at that point about 4 feet.

To transport the scows, a stern paddle wheel steamer of the ordinary Mississippi River type was built, 20 feet wide, 70 feet long, and 3 feet deep. Its double engines have 8-inch by 42-inch cylinders, developing about 125 horse-power, and supplied by a boiler carrying 175 pounds pressure. The steamer draws 24 inches of water.

The scows and the steamer were built in a dock yard on the left bank of the river just below Herman Avenue. An additional scow 30 feet by 68 feet in size is also being built here, on which a No. 9½ Bucyrus dragline excavator will be mounted for auxiliary work on the river.

For most of the excavation above Main Street, now nearly completed, the draglines have traveled on rails laid upon "mats," (timber platforms) in the usual manner, the mats being laid along the shore. Now and then the machines have had to cross the river, which they did by building up the bed into a moving island after the manner described in the Bulletin of last October. For most of the work which remains, the loading dragline will be mounted upon an additional scow, 40 feet by 80 feet in dimensions, by means of which it will be shifted along the river as the work proceeds.

The low places along the river behind the levees, which are to be used as dumping grounds for the excavated material, as stated above, are indicated on the map, figure 133, by shading. Such dumping grounds are technically called "spoil banks." The two largest of these occur at the mouth of Mad River. That on the north bank will be entirely filled in between the new and the old levees, and will be developed by the city as a park. The one on the opposite bank, which is much the largest of all, occupies a part of the triangular space between the Mad and the Miami Rivers at the mouth of the latter. There will not be sufficient material for filling all of this triangle up to the top of the levees. The unfilled portion will be filled by the city. This space, now a dumping ground for rubbish, will some day be one of the most beautiful places in Dayton. It will be developed by the city as a park. There are three other spoil banks along the river, which will be used later, one adjoining and opposite McKinley Park, the second on the north bank just above Wolf Creek, and the third on the left bank of Mad River, opposite its mouth.

The total amount of material excavated from the bed of the stream to date in the Dayton river improvement is 340,000 cubic yards, 238,000 cubic yards of which has been deposited in the levees and spoil banks. 192,900 cubic yards has been moved twice by the dragline in getting it to its final place in the manner explained above. This makes the total material moved by the draglines 532,000 yards.

The work is being carried on by C. A. Bock, Division Engineer, and E. L. Chandler, Assistant Division Engineer, under the general supervision of J. H. Kimball, Construction Engineer.

Price Brothers' concrete block factory is now in operation, and is expected to turn out about 1,000 blocks per day. The arrangements and some of the machinery were devised by Geo. R. Price.

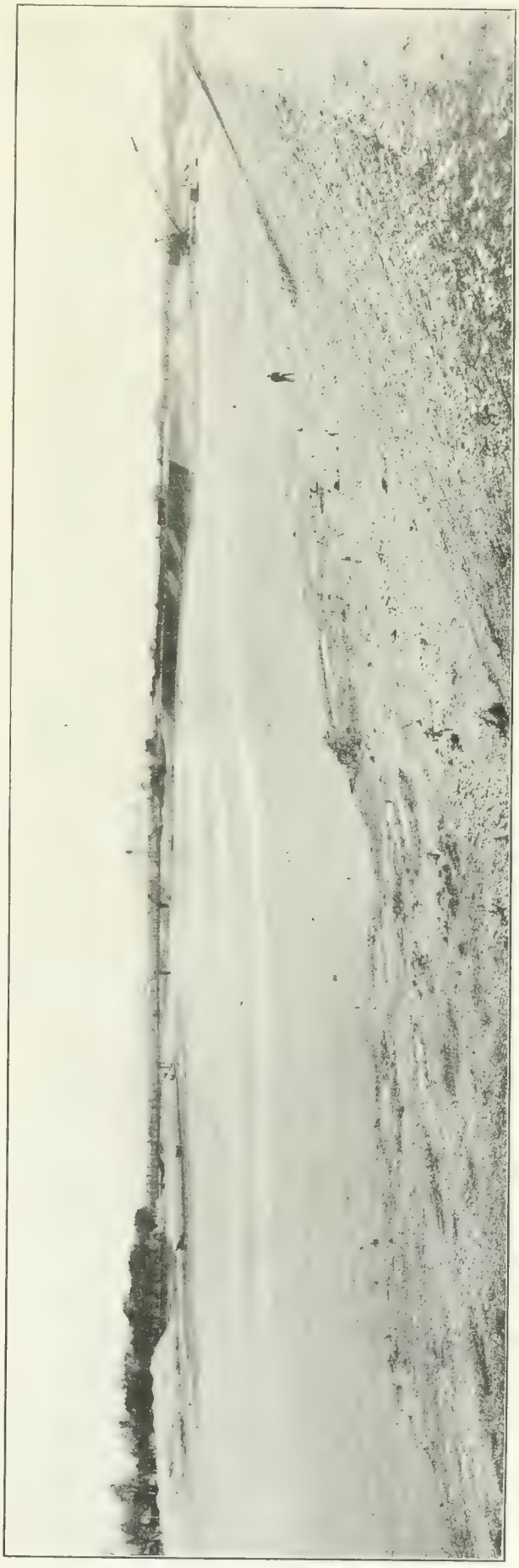


FIG. 134—LOOKING UP BOTH STREAMS AT THE JUNCTION OF THE MAD AND MIAMI RIVERS, APRIL 21, 1919.

April Progress on the Work

GERMANTOWN

Concrete has been placed at a fair rate, the total poured to date being 12,000 cubic yards. There remains approximately 2,000 cubic yards to be placed before the concrete structures will be completed with the exception of the permanent floor. It is planned that the permanent floor shall be placed after the hydraulic fill has reached such an elevation that there will be no danger from over-topping due to floods. At present, concrete is being placed principally in the inlet and outlet walls of the conduit.

Work on the "hog box" is progressing satisfactorily. The foundations for the monitor pumps have been placed, the pumps installed and the connections made.

The small dragline has been excavating the sump for the monitor pumps.

Pile driving along the permanent cut-off beneath the dam has been completed between the conduits and the creek, and this work has been temporarily discontinued.

The large dragline has practically completed the excavation in the outlet channel.

April 16, 1919.

A. L. Pauls, Division Engineer.

ENGLEWOOD

The outlet conduit has proceeded to the point where its completion this month can confidently be predicted. The retaining walls at the outlet are finished with the exception of a small portion on the westerly side. The retaining walls at the inlet are well under way and it is but a matter of a few weeks before they will be completed.

The large steam dragline excavating the cut-off trench at the easterly end of the dam has completed its work and is moving into position in the borrow pit to furnish earth material for the dredge pumps.

One electric dragline has been building the cross dam, from toe to toe, thrown up for the purpose of allowing the hydraulic fill east of the river to proceed in advance of the diversion of the streamflow into the outlet conduits.

The actual construction of the dam by means of the two 15-inch dredge pumps is now in full swing. Both pumps have been working during the day shift all the month. One of the pumps has also been operating a night shift since April 7. More or less tuning up has been going on and certain adjustments in the equipment have been made with the result that the plant is now working in an entirely satisfactory manner.

The camp grounds and roads have been given the regulation spring cleaning and overhauling, and the attractiveness of the camp thereby enhanced.

Work on the permanent roads, to replace those formerly crossing the damsite, has been in progress. About 3300 feet of 20-foot roadway has been graded, ready for gravel surfacing.

April 15, 1919.

H. S. R. McCurdy, Division Engineer.

FOUNTAIN

To date 5,000 cubic yards of concrete have been placed in the outlet structure, the work during the month having been principally around the hydraulic jump pool. The floor and sides of the pool are practically complete with the exception of the section which forms part of the partition wall.

The excavation for the outlet channel has been completed and the large dragline is working some of the surplus material northward into the dam. After this work the machine will dig that part of the cutoff trench lying between the outlet structure and the stream, and will then excavate the entrance channel.

Clearing and grubbing of the entire damsite has been finished. Some stripping is under way.

The sump for the dredge pumps is nearly excavated, the work being done by a stiff-leg derrick rigged as a dragline. The material is dumped into wagons through a portable hopper and hauled away to be placed in the dam, or for use in road building.

The foundation and floor of the pumphouse are completed and the pumps set for the monitor water supply. A culvert and head gate are being built to bring this water from the M. & E. Canal under the track of the Western Ohio Railway and the supply water pipe has been distributed over the borrow pit ready for laying.

April 18, 1919.

Barton M. Jones, Division Engineer.

TAYLORSVILLE

The first cut on the outlet excavation at the lower end is now out to within about 30 feet of full width and 8 feet of grade.

The excavation for the lower end of the concrete track has been finished and the machinery has been installed on the gravel washing plant which is now about ready for operation.

The hydraulic sluicing was hindered considerably during the latter part of March on account of the rapid wear on the small 34-inch runners which came with the Morris pumps. We tried a 39-inch runner which gave very satisfactory service at low and medium speeds but overloaded the motor considerably at full speed. However, the desired head could be maintained without running full speed. A 37-inch runner was then tried and found to be very satisfactory. It has now been in service for about 100 hours, and judging from the head delivered at a certain speed it has worn but very little.

Road No. 13 has been finished, and a survey and paper location made for the proposed road leading from the east end of the dam to the National Road 1½ miles north.

The grading is being done for a connecting track just south of Camp, from the present track of the B. & O. R. R. to the new location thereof.

The false work has been started for the new concrete arch highway bridge over the new B. & O. tracks at the center line of the dam.

April 16, 1919.

O. N. Floyd, Division Engineer.

HUFFMAN

The placing of concrete has been continued during the past month, a total of 4700 cubic yards having been poured to date. This completes the floor from the upper end down to the entrance to the conduits. Both walls upstream from the conduits have been built up to elevation 810, or ten feet above the lower berm. Forms have been built for the floor down to the lower end of the conduits and the warped forms for the walls at the conduit entrance have also been placed.

The electric dragline has completed the excavation across the deepest part of the hydraulic jump pool, that is, down to the point where the upstream submerged weir is to be built. About one-third of the area from this point to the end of the concrete has also been excavated down to grade. About 25,000 cubic yards have been taken out during the past month, all without moving the dragline.

The outlet from the end of the concrete to Mad River will be dug after the excavation for the concrete is completed.

Work has been slightly handicapped during the past month on account of rains.

April 19, 1919.

C. C. Chambers, Division Engineer.

DAYTON

Total channel excavation to date is 340,000 cubic yards. 238,000 cubic yards has been placed in levees and spoil banks. A total of 532,000 cubic yards of material has been handled to accomplish this work. Surfacing and seeding of the completed levee slopes have been continued below Herman Avenue and Webster Street.

A portion of the levee slope at the east end of Island Park Dam was washed out by the rise of March 16 and 17. This has been repaired by refilling with about 3000 cubic yards of gravel and covering this with a temporary protection of sand bag revetment.

Work above Island Park during the past month has been limited to dressing the new levee slopes.

Price Bros. have started making concrete blocks at their Idylwild Avenue plant, casting the first blocks on April 18.

Construction of Screw No. 3 was started April 1. This

FIG. 135—JUNCTION OF ROCK AND CONCRETE.

Finished surface at right is the interior conduit wall. The rough surface just to left of it is the end of one section of the wall picked away for purposes of construction. The rough surface at the left is the natural rock excavation, parallel to the smooth conduit wall at the right. The bond between concrete and natural rock is so thorough that it is impossible to tell where the two join. Picture taken April 12, 1919, at Englewood.

scow will be 30 ft. wide and 68 ft. long and will be used for transporting the small dragline to different jobs on the channel improvement.

April 19, 1919.

C. A. Bock, Division Engineer.

HAMILTON

The Class 14 steam dragline is continuing work on the levee across the north spoil bank. This machine moved 31,000 cubic yards during March and will complete this work in about a week.

The electric dragline has completed a cut along the east bank along the east side of the channel south of the Columbia bridge, dumping same direct into the spoil bank. It has turned south at the bridge and will dig out a cut west of the channel and load on cars.

The sewer work on Buckeye Street has been completed with the exception of a small amount of backfilling. The derrick has moved to Wood Street and started work on the Wood Street sewer. A 4″ centrifugal pump with 25 H. P. motor is being used to unwater the excavation. The outlet structure of this sewer will be built on piling.

The paving bricks have been laid on the new Black Street and part of the concrete walk has been laid.

Clearing has been started on the north spoil bank.

April 17, 1919.

E. C. Eiffert, Division Engineer.

RIVER AND WEATHER CONDITIONS

The heavy rainfall and comparatively high flood of March 14 to 19 were described in the April number of the Bulletin. At no other time during the month were the rivers high enough to interfere seriously with the construction progress. The total rainfall for the month at the Conservancy District's stations varied from 3.86 inches to 6.60 inches, a little more than half of the total falling in the above noted storm period. The total precipitation at the Dayton Weather Bureau station was 5.16 inches, or 1.71 inches greater than the normal for the month of March. This still leaves an accumulated deficiency from normal of 2.30 inches since January 1.

At the Dayton Weather Bureau station the mean temperature for the month was 42.8° F. or 2.4° above normal; there were 13 clear days, 7 partly cloudy days, 11 cloudy days, and 13 days on which the rainfall exceeded .01 inch; the average wind velocity was 11.6 miles per hour, the prevailing direction being from the northeast; and the maximum wind velocity for five minutes was 46 miles per hour from the west on the 17th.

April 21, 1919.

Ivan E. Houk, District Forecaster.

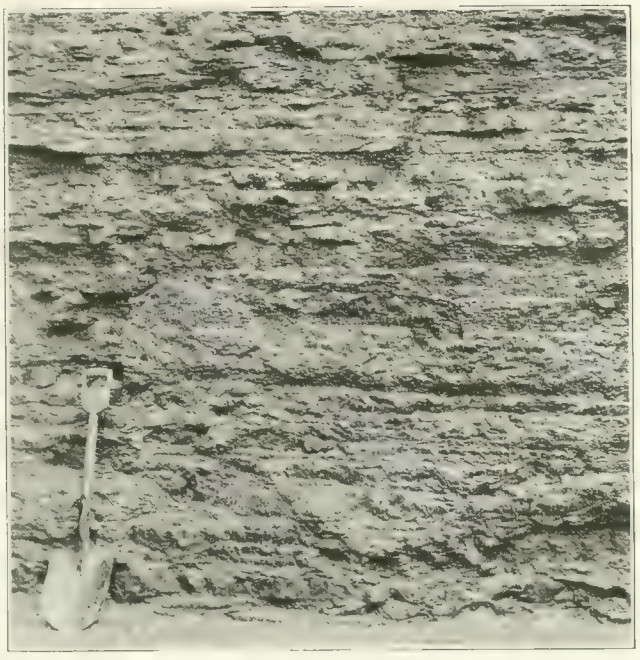


FIG. 136—ENGLEWOOD ROCK EXCAVATION

The concrete side wall of the conduit abuts against this natural rock wall. The picture shows clearly the solidity of the rock foundation on which the conduits are built. Picture taken April 11, 1919.

RAILROAD RELOCATION

Big Four and Erie Relocation.—The Walsh Construction Company started night work on the 15th of this month and will therefore increase their normal output from about thirty to about sixty thousand cubic yards per month, so that their portion of the work may be completed in the early part of August. George Condon has started excavating near Fairfield with the steam shovel, and will also probably put on a night force in order to complete the work at the same time. The superstructure of the bridge at the west end of the Huffman Hill is being painted by the Big Four's own forces. The concrete work which was done by the District under F. H. Sprague's supervision and that of Frank Hill Smith, Inc., is entirely completed.

The grading on these railways is 65 per cent complete.

B. & O. Relocation.—The general contractors, Grant Smith and H. C. Kahl, subcontractors Condon & Smith, Vang Construction Co., and Kahl Bros. Construction Company are maintaining the monthly average of 60,000 yards per month. Condon & Smith started night work the latter part of March to expedite their work, which will not be completed as early as that of the other contractors. The latter are expected to finish about the 15th of May.

The grading on the B. & O. is 70 per cent complete .

Ohio Electric Railway.—The work on the Ohio Electric has been started by F. H. Sprague, one of the superintendents of the District. The excavation for the Mud Run trestle is under way as well as that for the railway embankment. J. C. McCann, who has the work of grading between Fairfield and Mud Run, will start in a very few days.

April 16, 1919.

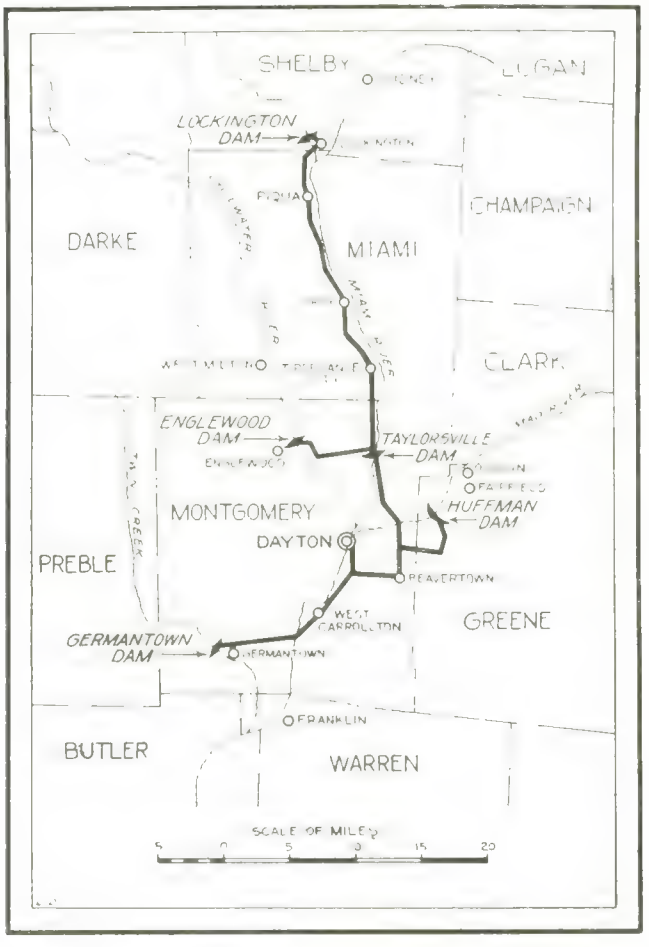
Albert Larsen, Division Engineer.

The Power Transmission Line Used on the Conservancy Work

Seventy-Three Miles of Line Built for the Use of the District.

As has been stated in previous issues of this Bulletin, all of the electrical energy for light and power purposes at the Lockington, Englewood, Taylorsville, Huffman, and Germantown construction camps, and for the Dayton River improvement is supplied by the Dayton Power & Light Company. The reason for making such extensive use of electrical power in preference to operating many small isolated steam plants was made clear in the March issue of the Bulletin.

The provisions which were made by the Dayton Power & Light Company to provide for the future growth of the region which it is supplying made it possible for the Conservancy engineers to obtain the 10,000 or more horse power needed for the work of the District. The old plant of the Company generated approximately 26,000 horse power. When the new Miller's Ford central station was put into operation 35,000 horse power became available, and ultimately this plant will have a capacity of 140,000 horse power. The new plant, the construction of which was started in August, 1916, is located along the main line of the Big Four Railroad, and in close proximity to the Miami river at the southern corporate limits of the city of Dayton. The machinery is of the latest design, both as regards boilers and generators. Two steam turbo-generators of 17,500 horse power each generate alternating current at 6600 volts. From the Miller's Ford station, transmission lines radiate in all directions through the Miami valley.



MAP SHOWING ELECTRIC POWER TRANSMISSION LINES, D. P. & L. CO.

In order to supply electric energy to the various damsites, the building of additional transmission lines was required. Realizing the importance of the work of the District, and the necessity of furnishing power as soon as needed, practically the entire services of the engineers and construction forces of the Dayton Power & Light Company were engaged for months in planning and building the necessary transmission lines. All of the material had to be purchased, rights-of-way secured, construction camps prepared, labor secured, and gangs organized. The result was that current was available in June, 1918, at all of the damsites.

The line to Taylorsville was started first, on March 19, 1918, and by May 21, seven miles had been completed and energized. From Taylorsville, the work was pushed westward toward the Englewood camp, and by June 18 the District was able to put an electrically equipped dragline in operation at the Englewood damsite. In the meantime, work was progressing on transmission lines to the damsite on Twin Creek, near Germantown. This required a line 8½ miles in length, which was placed in commission on June 27. To reach the Huffman damsite a line was built connecting with the Osborn-New Carlisle branch of the Dayton-Xenia transmission line of the Dayton Power & Light Company.

On October 1, 1918, it was decided to build a transmission line from Taylorsville to Piqua, to connect with the line previously installed by the Conservancy engineers between Lockington and the power plant of the Dayton Power & Light Company at Piqua. This line was designed to carry not only all of the electricity required at Piqua, but also that needed at the Lockington damsite. It involved

GET IN LINE

Have you got one? Look and see!
I mean the button with the V!—
The big, bold V in field of blue,
That should be found somewhere on you!—
The disc, that by the great horned goat
Should gleam from every vest or coat!

If you have not already bought,
Get busy!—you should not be caught
With slinking step and downcast eyes,
Avoiding all your fellow guys,
Because you failed, in time of need,
Your Uncle's call for help to heed!

Buy bonds!—for this is your last chance
To help our boys in far-off France!
Although sweet peace is on the way,
The soldiers' bills are yet to pay.
Buy Victory Bonds, and be twice blessed;
Dig!—Sport a button like the rest!

—Elldee.

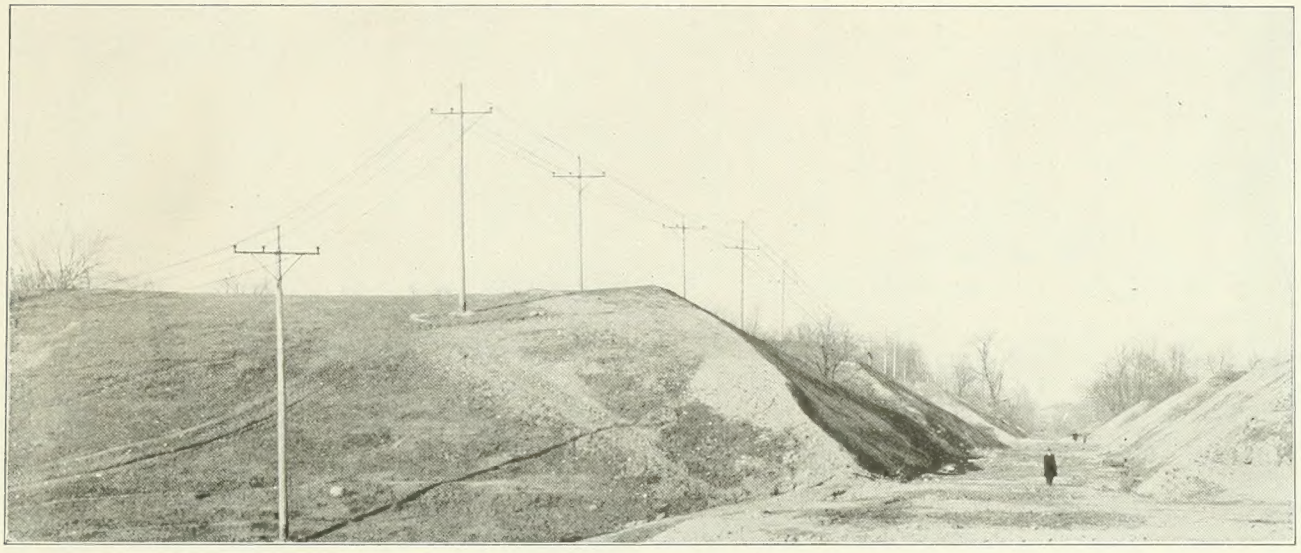


FIG. 138—POWER TRANSMISSION LINE BESIDE NEW B. & O. R. R. LINE, TAYLORSVILLE, JAN. 15, 1919.

The pole line here follows the new grade for the Baltimore & Ohio Railroad. The arrangement of the insulators which carry the wires, and the cross arms, is plainly seen. The fourth wire, which is fastened to the pole tops, is there to protect against lightning. At every fourth pole, it has metallic connection with the earth. The pole nearest in the view is so equipped.

the construction of 21 miles of transmission line which, in spite of unfavorable weather conditions and other obstacles, was completed in 3 months and 19 days.

As was explained in the March issue, a 3-phase, alternating current requires 3 separate copper wires for transmission; one to carry each phase. The wires must be kept a sufficient distance apart to prevent "arcing;" that is, the jumping of electric current from one wire to another. The wires are supported on heavy porcelain insulators to which they are fastened by means of short copper tie wires. This prevents the current from coming into contact with the cross arm and so establishing connection with the ground. To protect against damage and interference by lightning, a steel cable, known as the "ground wire," is strung over the tops of the poles, connection being made at every fourth pole in such manner that electricity discharged from the air can pass directly down the pole into the ground without being communicated to the transmission wires. The poles are set from 200 to 250 feet apart, averaging 25 to the mile. The copper wires are of different thickness, gaged to carry the current with the least practicable loss. On the trunk lines, a bare wire is used of 00 B. & S. gauge; on the branch lines the wires are usually No. 2 or No. 4 B. & S. gauge.

All told, the transmission lines built to furnish power for the Conservancy work, and including the Piqua transmission line, required the setting of 2016 poles, varying in length from 40 feet to 65 feet. These represent 25 car loads. More than 100 tons of steel was used in the shape of cross arms, bolts and other hardware. A total of 205 miles of copper wire of different gauges was used, besides 68.4 miles of copper-clad ground wire for protection against lightning.

Long distance transmission lines always carry current at very high voltages in order to reduce transmission losses to a minimum. This so-called high "tension," or high "potential," in the case of the Dayton Power & Light Company's trunk lines, is 33,000 volts. At each construction camp of the District is a sub-station where the voltage is reduced, or technically speaking, "stepped down." The camp circuits carry current at 2300 volts, and this is again stepped down to 440 for use in the motors, and to 110 volts for lighting.

At the sub-stations the stepping down from 33,000 to 2300 volts is accomplished by means of large transformers, set up in groups, or so-called "banks." The principle on which the transformers work was described in the March Bulletin.

Among the interesting features at each of the electric sub-stations, is the 33,000-volt, outdoor meter installation. This consists of a double compartment, water-proof, steel tank, the rear portion of which contains a set of highly accurate current and potential transformers immersed in oil, and the front portion a neat slate panel upon which the meters and testing cut-outs are mounted. The meters are two in number; one the latest graphic, recording "maximum demand" meter, the other a polyphase kilowatt-hour meter, both of the latest type and under the same cover. The clock which runs the maximum demand meter will run for 40 days with one winding. The record made by this meter is explained under figure 139.

R. F. Eastman Goes With Truss-Con Steel Co.

Lieutenant R. F. Eastman, recently of the United States Coast Artillery at Sandy Hook and Fortress Monroe, and who recently returned to his old work with the District, has resigned his position, the resignation taking affect April 19. He has entered the service of the Truss-Con Steel Company, of Youngstown, Ohio. His work will be in charge of design in the company's Dayton office. The Bulletin wishes him every success in his new work.

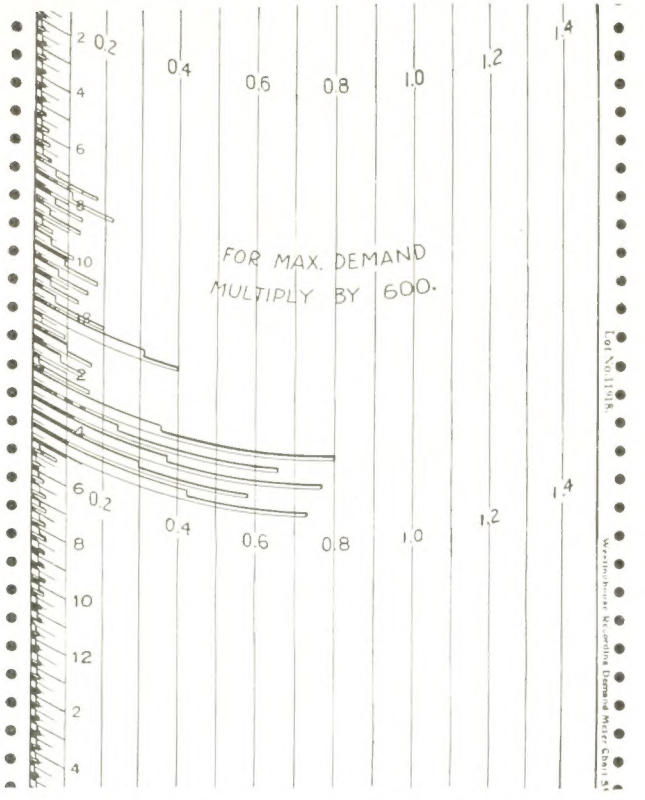


FIG. 139—MAXIMUM DEMAND CHART.

This is the actual chart of electrical power used at the Taylorsville dam on October 26, 1918. The vertical column of figures at the left indicate the time of day, 2 o'clock, 4 o'clock, 6 o'clock, etc. The jagged line at the left, swinging to the right on a circular arc, and then dropping back, indicates the maximum demand for electric power during the half-hour period indicated by each swing. The figures 0.2, 0.4, etc., extending in a circular arc across the chart, are for use in calculating the maximum power used. Thus on this chart, the maximum swing to the right of the jagged line just reaches the vertical line marked 0.8. Multiplying this figure by 600, we get 480, which is the maximum "kilowatts" of power used on October 26 at Taylorsville. Four hundred and eighty kilowatts equals 536.2 horse power.

The jagged line showing maximum power used is drawn on the paper by a pen which is actuated by electro-magnetic mechanism inside the meter. The paper strip on which the record is drawn is wound on a brass cylinder which rotates, driven by clock-work, the paper being driven by studs on the cylinder which engage the perforations shown in the picture on each edge of the paper strip. The clock is a special clock which will run the drum accurately for 40 days with one winding.

Besides the chart showing maximum demand during each half hour of the day and night, as shown above, the total "kilowatt hours" of electrical energy consumed at Taylorsville is measured by a second meter mounted beside the first. The amount of electricity paid for is measured by the second meter, but the amount to be paid per kilowatt hour will depend upon the irregularity of the maximum demand current. Suppose a motor uses but a few hundred units

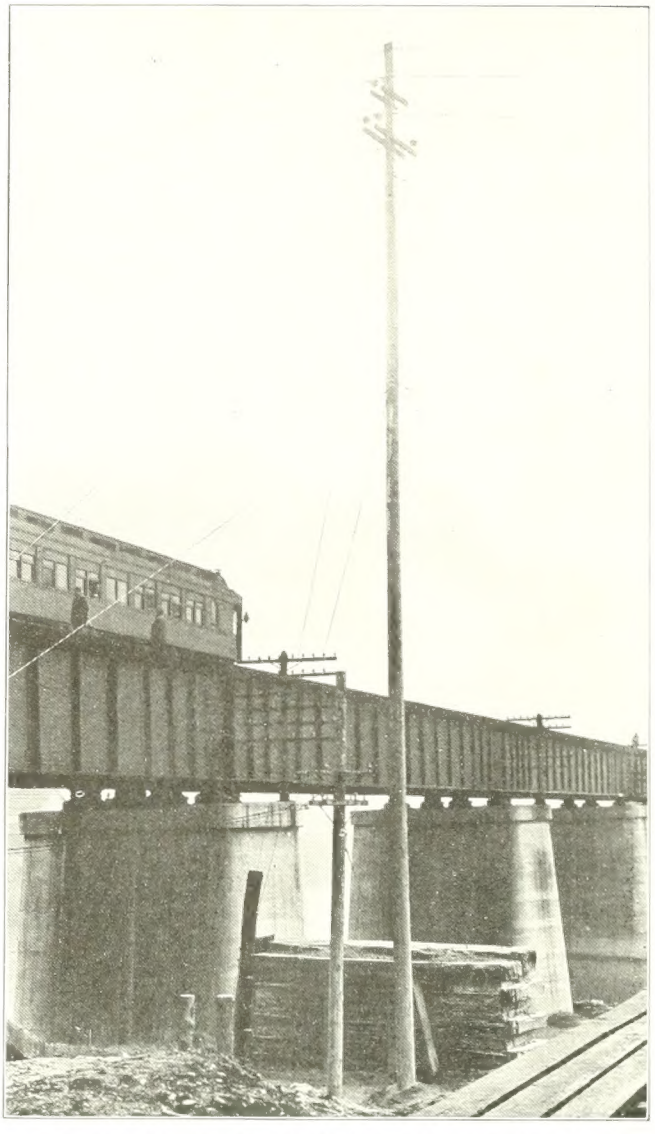


FIG. 140—THE TALLEST TRANSMISSION LINE POLE, JAN. 23, 1919.

A 65-foot pole was required at the Pennsylvania Railroad bridge at Piqua in order to carry the high tension wires 35 feet above the track, as required by law.

of energy during the day, but for brief periods requires to use a very great amount of energy. The power company must keep reserve electrical energy in store to supply that sudden demand, which reserve cannot be used for other purposes. Additional charge is made for this necessary reserve power, even though it be not used.

Major Watson Returns from France

Major W. P. Watson, formerly Director of the Tractor Artillery School of the American Army, near Paris, France, and an old Conservancy man, has resigned his commission and returned to Dayton. He returned overseas on the Otsego, American transport, formerly the famous German raider, Prince Eitel Frederick. He is soon to be married to Miss Emilie Wuichet of Dayton. Miss Wuichet is a sister of Mrs. C. H. Shea, wife of our Assistant Division Engineer at Lockington. Major Watson's friends are all very glad to welcome him back.

The Conservancy Technical Reports

The interest which was shown by engineers in the list of Technical Reports on the work of the District, which was published in the last issue of the Bulletin, has been so evident that we think it worth while to repeat the publication of the list. These reports when completed will include all published data of permanent value relating to the work of the Miami Conservancy District. The following volumes may now be obtained.

PART I—THE MIAMI VALLEY AND THE 1913 FLOOD.
By Arthur E. Morgan,
Chief Engineer of The Miami Conservancy District.
128 pages, 6″ x 9″, 44 illustrations, paper covers; price 50 cents net, postpaid.

This volume is introductory to the series of Technical Reports, but is not in itself, however, of a technical nature. It contains a vivid description of the flood of March, 1913, which caused great damage in the Miami River Valley, and as a result of which the flood control works now being built were undertaken.

PART II—HISTORY OF THE MIAMI FLOOD CONTROL PROJECT
By C. A. Bock,
Division Engineer of The Miami Conservancy District.
194 pages, 6″ x 9″, 41 illustrations, paper covers; price 50 cents net, postpaid.

This is a recital of all events of interest in the history of the flood prevention movement in the Miami Valley. Its chief value lies in the fact that itt describes the steps necessary and the difficulties usually encountered in initiating and carrying out a great public engineering enterprise of this nature.

PART III—HYDRAULIC JUMP AND BACKWATER CURVES.
By Sherman M. Woodward, R. M. Riegel and J. C. Beebe.
111 pages, 6″ x 9″, 88 illustrations, 12 tables, paper covers; price 50 cents net, postpaid.

The first part of the book, entitled "Theory of the Hydraulic Jump and Back Water Curves," sets forth the theory of these complex phenomena, and is written by S. M. Woodward, Professor of Hydraulics and Mechanics at Iowa University, and Consulting Engineer for The Miami Conservancy District.

The second half of the book, entitled "The Hydraulic Jump as a Means of Dissipating Energy," is devoted to a description of the experiments conducted by J. C. Beebe and R. M. Riegel of the Engineering staff of the District, to determine the properties of the hydraulic jump and its utilization in stilling the water which will issue at high velocities from the outlet conduits in the dams now being built by the Conservancy District.

PART IV—CALCULATION OF FLOW IN OPEN CHANNELS
By Ivan E. Houk,
Hydrographer of The Miami Conservancy District.
283 pages, 6″ x 9″, 79 illustrations, 48 tables, paper covers; price 75 cents net, postpaid.

This is a report describing how the maximum flow of the Miami River and its tributaries during the disastrous flood of March, 1913, was determined by subsequent measurements of the river channels and flood elevations. A large part of the volume is devoted to a discussion of different formulas, many of them of foreign origin, used in computing stream flow.

PART V—STORM RAINFALL OF THE EASTERN UNITED STATES.
By the Engineering Staff of The Miami Conservancy District.
310 pages, 6″ x 9″, 114 illustrations, 11 tables and appendix, paper covers; ;price 75 cents net, postpaid.

This book sets forth the results and investigations made to reach safe conclusions as to the probable size and frequency of severe floods in the Miami River. Its most noteworthy feature is a study of the relations between the areas covered by different depths of rainfall and the duration of such rainfall for each of the 33 largest storms on record in the eastern half of the United States.

PART VI—CONTRACT FORMS AND SPECIFICATIONS
By the Engineering Staff of The Miami Conservancy District.
192 pages, 6″ x 9″, 3 diagrams, paper covers; price 50 cents net, postpaid.

This volume has been issued to meet the continued demand for copies of the standard specifications and contract forms in use by The Miami Conservancy District, in the construction of the large earth dams and the protection works along the river channels.

ATLAS OF SELECTED CONTRACT AND INFORMATION DRAWINGS TO ACCOMPANY PART VI.
10 pages of text, 15″ x 11″, 139 plates, paper covers; price $1.50 net, postpaid.

The Atlas contains 139 representative selections of plans made preparatory to the letting of contracts.

Departure of Mr. Porter-Shirley

We are sorry to note the departure of C. W. Porter-Shirley, our Camp overseer, to accept a call to a Unitarian pastorate at Genesee, Ill. He came to the the District from a pastorate at Barre, Mass., in February, 1918, drawn by his interest in the human problems presented by our construction camps. He had much to do with bringing the camps to their present high morale and efficiency of organization.

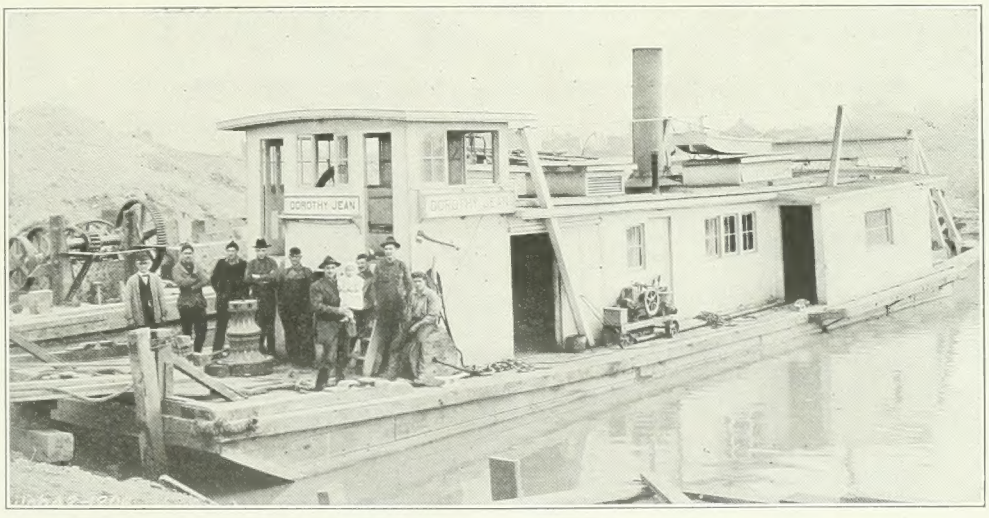


FIG. 141—STEAMBOAT USED FOR MIAMI RIVER WORK IN DAYTON.

The boat is of 20 feet beam, 70 feet in length and 3 feet in depth. She is a regular Ohio river steamer of the stern wheel type and was built in a shipyard beside the Miami River especially for the Conservancy work. Dorothy Jean, the baby of Division Engineer Bock, and after whom the steamboat was named, is seen surrounded by the steamboat crew, and evidently for the time being supersedes Captain Welcome (at the left) in command of the boat. Picture taken March 29, 1919.

SIXTY-SIX THOUSAND American boys lie dead beneath the soil of France; coffinless, buried in the khaki they fought in; alone in some corner of a stubble field by Chateau Thierry; or in rows, by hundreds, by thousands, under the torn trees of the Argonne forest, or by the banks of the Meuse.

There they lie—66,000 of them—boys with fathers and mothers, sisters and sweethearts—American boys who loved life as you love it—66,000 of them—dead beneath the soil of France.

—That was the price *they* paid.

—What price have *you* paid?